

ABSTRACT
A PULSE TUBE REFRIGERATOR

The present invention relates to pulse tube refrigerators for
5 recondensing cryogenic liquids. In particular, the present invention
relates to the same for magnetic resonance imaging systems. In many
cryogenic applications components, e.g. superconducting coils for
magnetic resonance imaging (mri), superconducting transformers,
generators, electronics, are cooled by keeping them in contact with a
10 volume of liquified gases (e.g. helium, neon, nitrogen, argon, methane).
In a first aspect, the present invention provides a pulse tube refrigerator
PTR pulse tube refrigerator (PTR) arrangement within a cryogenic
apparatus, wherein a regenerator tube of the PTR is finned. In this
configuration the fins or baffles, are believed to increase the surface area
15 available for distributed heat transfer from the helium atmosphere to the
regenerator.